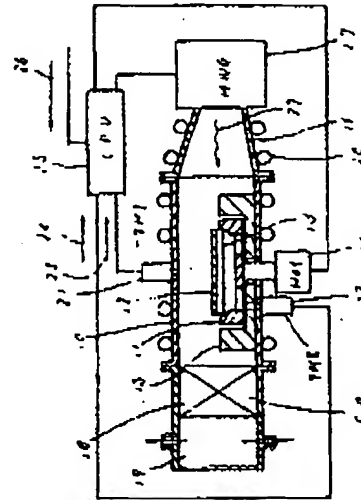


## EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 61043417  
 PUBLICATION DATE : 03-03-86  
 APPLICATION DATE : 08-08-84  
 APPLICATION NUMBER : 59164985  
 APPLICANT : HITACHI LTD;  
 INVENTOR : AMADA HARUO;  
 INT.CL. : H01L 21/265 H01L 21/20 H01L 21/263  
 H01L 21/324  
 TITLE : HEAT TREATING METHOD AND  
 HEATING DEVICE UTILIZING  
 THEREOF



ABSTRACT : PURPOSE: To perform an annealing treatment and a surface treatment by heating up the surface only of the material to be heated by a method wherein an electromagnetic wave of high frequency band is made to irradiate intermittently on the material to be heated

CONSTITUTION: A microwave (electromagnetic wave) generating part 17 is provided at the right end of the rectangular waveguide shape processing chamber 10 of a heating device, and a microwave 27 is made to irradiate into the processing chamber 10. A stage 11 surrounded by a reflector 15 is provided at the center part of said processing chamber 10, and the stage 11 is rotated by a motor 14. A semiconductor wafer 13 is placed on the stage 11, and a damage layer 12 to be used when an ion-implantation is performed is formed on the upper surface of the wafer 13. The wafer 13 is uniformly heated by the rotation of the stage 11, and the microwave 27 which is made to irradiate in the direction of the reverse side of the wafer 13 by a reflector is suppressed. Then, the microwave generating part 17 is controlled by monitoring the temperature of the wafer 13 using a temperature monitor 21 under the control of a controlling part 35. A microwave 27 having a high frequency band is made to irradiate intermittently on the wafer 13, and the surface only of the wafer 13 is heated up.

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